

THE ADAPTIVE MODIFICATIONS OF THE PASTURING COMPORTMENT AT THE POLWARTH SHEEP IN ROMANIAN CONDITIONS

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Introduction

The study of the Polwarth sheep begun at once with their import to Romania (2). Initially the Polwarth Sheep effectives have been raised separate in special conditions of food and shelter. In this stage there was no problem: the production and reproduction parameters registered in Romania reached approach values to the ones from the origin country, Australia.

In the next years the fecundity decreased to 76% that necessitated the introduction of some improvement programs of the reproductions, and the Polwarth sheep response positively. In present considering that the Polwarth sheep generations born in our country adapted to the local conditions of life and because of this small number of them, they are raised together with the Țigai sheep.

We know that the adaptation and the acclimatization process it is closed when the morphophysiological modifications are handed down to the next generations and it's producing a group of fertility that it doesn't decreased the group effective (3).

In this study has been followed the compartmental modifications appeared to the Polwarth sheep after a long cohabitation with the Țigai sheep.

Material and methods

It has been studied the pasturing comportment at 150 sheep, formed with Țigai and Polwarth sheep, that belong to one farm from Brașov, raised for wool and meat production. Were marked 20 animals from each rase and were studied the following physiological parameters: the duration and the frequency of the pasturing periods, the pasturing front, the duration and the frequency of the chewing periods, the frequency of the watering, of the defecation and of the passing water. For this study was necessary the attentive observation 6 hours a day 2 exemplary concomitant. 3-4 days before starting the experiment, the observer stayed 6-8 hours a day among the sheep on the pasture with a view to be inured with the animals effective with his presence.

Results

We found that Țigai sheep capitalizes better the pasture vegetation better than the Polwarth sheep because of these rase, species like *Festuca pratensis* or *Dactylis glomerata* don't satisfied to an optimal level the functional necessities. This is a fact that is reflecting in lower growing rhythm of the Polwarth lambs comparative to the Țigai sheep growing rhythm that pastures together on the same pastureland.

The sheep pastures usually in the morning and in the late afternoon, and they are chewing with a higher intensity in the evening and during the night (exception of those, are the periods of sleep). The chewing process is preceded of a rest period in decubital state, followed of the standing in a four-footed attitude and starting chewing.

The chewing evolution (table 1) is different: to the Polwarth sheep the total length of chewing is 7-8 hours from 24, comparative to 9-10 hours from 24 to Țigai sheep; that explains the reduction with 21% at the Polwarth sheep of this process. Appears a frequent interruption of the chewing with the reduction of the chewing number period (4-7 periods a day), but with the compensation lasting of the chewing period length (40-130 minutes), comparative to the Țigai sheep. We observed to the Polwarth sheep the decreasing of the food period number (3-5 a day) and of the total length of the pasturing (5-7 hours) comparative with the registered values to Țigai sheep.

Table 1. The pasturing comportamental at the Țigai and Polwarth sheeps

The sheep activities at pasture	Daily values	Țigai	Polwarth
Pasturing periods	numbers	4 – 12	3 – 5
The total length of pasturing	hours	6 – 10	5 – 7
Chewing periods	numbers	10 – 14	4 – 7
Chewing periods duration	minutes	10 – 90	40 – 130
The total length of chewing	hours	9 – 10	7 – 8
Drinking	numbers	3 – 5	3 – 4
Defecation	numbers	5 – 6	6 – 8
To pass water	numbers	7 – 10	8 – 12

About the watering, the sheep consumes variable quantities of water depending on the nature of the fodder ingest and of the water temperature. Thus, in case of the fiber fodders, the mature sheep consumes 1-3 liters a day, and after the juicy forage the water consume decreases to 0.5 liters a day; but in the same cases the watering must be do with a frequency of 3-5 times a day (1). In our case the frequency of watering doesn't present important modifications.

The defecation and the water passing depend on the structure and the proportion of fodders. The sheep defecation is 1-3 kg a day and it passes water 1-1.5 liters a day, and the

frequency of those actions is 6-8 times a day, respectively 10-12 times a day (1). We didn't saw important modifications to the experimental animals. The defecation starts 2 hours after foddering and continues till to 3-4 hours after foddering and the passing water starts earlier, achieving the maxim quantity at 4 hours after foddering. The defecation and the passing water don't conditioning mutual, but they can be sometimes simultaneous.

Discussion

The comportment of the Polwarth sheep on the pasturing was influenced directly on the climatic conditions, the floristic composition of the pasture, the managerial growing factors and indirectly on the cohabitation with the Țigai race presence.

The relative humidity in our country being much lower comparative to the oceanic climate from the origin country, represents a stress factor for the Polwarth sheep in conditions of a lower humidity of the air, especially when this is associate with higher temperatures, a frequent situation appeared in our country, the Polwarth sheep are exposed to the risk of contacting pulmonary affections. The comportment of those sheep has been followed in these kinds of situations. Has been ascertained the Polwarth sheep during higher temperatures are isolated and spread under the protection of the vegetation zone, while the Țigai sheep are crowded and hides there heads under the neighboring abdomen, thus inspiring an air less dry.

The Polwarth sheep have a sedentary pasturing comportment and consists in spreading sheep on the pastureland and in occupation of a small surface, which they use for food and rest. This kind of comportment continued to be transmitted hereditary because appeared to the generations born in our country too.

The prolonged action of some disturbing factors from the external milieu (presence of dogs, production of big noises) produces panic attacks to the Polwarth sheep because these are much sensitive than the Țigai sheep.

The modifications appeared in the chewing and pasturing activity suggests the implication of the hypothalamic nervous centers of the hunger and satiety. Those disturbs are caused by the permanent stress of the Polwarth sheep because instead of the usual pasturing they must move by the shepherds yells and by the dogs barking, so they must traverse long distances. The result is that, to the Polwarth sheep were imposed the pasturing in linear front and in the typical rhythm of the Țigai sheep as a consequence of a long cohabitation with these ones.

Conclusion

1. The permanent psychic stress, which is, exposed the Polwarth sheep to, produces troubles at the hypothalamic nervous centers of hunger and satiation.
2. At the Polwarth sheep the bigger consume of energy in order of the body moving during the fodder finding in the detriment of other functions, represent an important metabolic disorder.
3. The modifications appeared in the pasturing comportment of the Polwarth sheep are a consequence of an insufficient adaptation.

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